

The diagram illustrates a network architecture. A central device (1) is connected to three cloud-based networks (2, 3, 4). Each cloud network contains a set of nodes (40, 42, 44; 70, 72, 74; 80, 82, 84) and is connected to a central device (1) via a cloud (5, 6, 7).

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System, as well as terminal, as well as server.

#### BACKGROUND OF THE INVENTION

The invention relates to a system comprising

- a multimedia network,
- a first server, and
- 5 - at least one terminal comprising connection means for setting up a link between the terminal and the first server by way of the multimedia network.

Such a system is generally known. The multimedia network is formed by, e.g., the Internet. The terminal is, e.g., a PC. The  
10 connection means in the terminal are formed by a processor apparatus loaded with a web browser known per se, in combination with a modem/ISDN interface [ISDN = Integrated Services Digital Network]. The web browser communicates with the server according to an Internet protocol (IP). Loaded with software for transmitting, e.g., HTML  
15 pages [HTML = HyperText Markup Language], the server comprises a processor apparatus, which is suitable for communicating with the users' terminal by means of the Internet protocol. The server further comprises storage means on which there is stored information associated with a specific service, such as a video presentation. The  
20 server further comprises transmitter/receiver means for transmitting the information associated with a service by way of the multimedia network to the terminal.

The known system works as follows. The user of the terminal calls in on a modem pool and is connected to the Internet. The  
25 terminal of the user communicates with a server by way of the web browser with which it is loaded. By clicking so-called references on the video screen using the mouse associated with the terminal, the user may look up and choose services which are being offered by way of the Internet. Such services are, e.g., video presentations, such  
30 as films or video clips. The web browser of the terminal seeks contact, by way of the Internet, with the server in which the service desired by the user is stored, via the transmitter/receiver means already referred to. By way of said transmitter/receiver means, the server transmits the information associated with the desired service  
35 via the Internet to the terminal of the user.

The strong point of a multimedia network, such as the Internet,

is that it provides a user access to a large number of services in a simple manner. A drawback, however, is that the quality of a service transmitted by way of a multimedia network, such as the Internet, e.g., a video presentation, is low due to the small-band character of the network and, in addition, still depends on the quantity of traffic on the multimedia network.

#### SUMMARY OF THE INVENTION

10 It is therefore an object of the invention to provide for a system according to the preamble, whereby a user may obtain access to a service, with the bandwidth and throughput of the link between the terminal and the server which offers said service, being guaranteed.

To this end, the system according to the invention is  
15 characterised in that the system further comprises a telecommunications network and that the connection means are arranged for, during a session, automatically setting up, by way of the telecommunications network, a link between the terminal and a second server as a function of a code stored in the first server, such as a  
20 telephone number, it being possible for the first server and the second server to be one and the same. Using the system according to the invention, the user may first, by way of the multimedia network, look up and choose a service on the first server, whereafter the data associated with said service is transmitted by the second server via  
25 the telecommunications network to the terminal. Telecommunications networks have the characteristic that the quantity of data per second capable of being transmitted over a link, is guaranteed. This means that a service, such as a video presentation, which is transmitted by the second server via the telecommunications network to the user, may  
30 have a constant quality, irrespective of any other traffic via the telecommunications network. The telecommunications network is, e.g., a PSTN network (PSTN = Public Switched Telephony Network) or an ISDN network. The connection means in the terminal which, as mentioned before, are formed by, e.g., a processor apparatus loaded with a web  
35 browser known per se, in combination with a modem/ISDN interface, may be rendered suitable in a simple manner for setting up a link to the server by way of the telecommunications network, namely, by adding a software module which is called up from the browser. Said software

module sets up the link to the second server as a function of the telephone number, referenced by the HTML page transmitted by the first server.

5 A first embodiment of the system according to the invention is characterised in that the telephone number is a payment number. As a result, an operator of a service is capable of cashing in money for offering the service. At the moment, cashing in money for services offered via the Internet often still is a problem.

10 A second embodiment of the system according to the invention is characterised in that the first server comprises storage means for storing a video presentation with a basic quality and transmitter means for transmitting the video presentation with the basic quality by way of the multimedia network to the terminal, and that the second server comprises storage means for storing a video presentation with  
15 a higher quality and transmitter means for transmitting the video presentation with the higher quality by way of the telecommunications network to the terminal. By separately storing the video presentation in two different qualities, it is possible in a simple manner to transmit the video presentation with the basic quality via the  
20 multimedia network to the terminal and to transmit the video presentation with the higher quality via the telecommunications network to the terminal. In that case, the user can first get to see, e.g., the video presentation with the basic quality via the multimedia network. If he finds the video presentation interesting,  
25 he may choose to receive the same video presentation with the higher quality via the telecommunications network.

30 A third embodiment of the system according to the invention is characterised in that the video presentation with the higher quality has a higher image resolution than the video presentation with the basic quality.

A fourth embodiment of the system according to the invention is characterised in that the video presentation with the higher quality comprises more images per unit of time than the video presentation with the basic quality.

35 A fifth embodiment of the system according to the invention is characterised in that the video presentation also comprises audio, and that the audio quality of the video presentation with the higher quality is higher than the audio quality of the video presentation

with the basic quality.

Said embodiments relate to different quality parameters which may differ between the video presentation with the basic quality and the video presentation with the higher quality. Of course, said  
5 embodiments may be applied both separately and in combination.

A sixth embodiment of the system according to the invention is characterised in that the video presentation with the higher quality is longer than the video presentation with the basic quality. The video presentation with the basic quality, which contains only part  
10 of the entire video presentation, is shown to the user as an "appetiser". If the video presentation interests him/her, the user may then get to see the video presentation with the higher quality, which comprises the entire video presentation.

The invention further relates to a terminal and a server for  
15 use in the system according to the invention.

#### EXEMPLARY EMBODIMENTS

The invention will be explained in greater detail by reference  
20 to exemplary embodiments shown in the Figures. In this connection:

FIG. 1 shows a block diagram of a system according to an exemplary embodiment of the invention,

FIG. 2 shows a block diagram of a terminal for use in a system according to the invention,

25 FIG. 3 shows an alternative exemplary embodiment of the invention, and

FIG. 4 shows the video screen of the terminal having an HTML page displayed thereon.

30 FIG. 1 shows a block diagram of a system according to the invention. The system comprises a terminal 1 of a user. Of course, the system may comprise many more terminals than the one shown, but for clarity's sake there is shown only one in the figure. Said terminal 1 is coupled, by way of a calling-in network 2, to a  
35 multimedia network 3. The calling-in network 2 is, e.g., a telecommunications network known per se, such as a Public Switched Telephony Network (PSTN) or an Integrated Services Digital Network (ISDN). The multimedia network 3 is, e.g., the Internet. The system

further comprises a first server 4, which is coupled to the multimedia network 3, and which is provided with storage means 40, transmitter/receiver means 42, and a processor apparatus 44 which comprises a processor having an associated memory. The system further comprises a first telecommunications network 5 and a second telecommunications network 6, to which the terminal 1 is coupled. The first telecommunications network is, e.g., a Public Switched Telephony Network (PSTN). The second telecommunications network 6 is, e.g., an Integrated Services Digital Network (ISDN). Finally, the system comprises a second server 7, which is coupled to the PSTN network 5, and a third server 8, which is coupled to the ISDN network 6. The second server 7 is provided with storage means 70, transmitter/receiver means 72, and a processor apparatus 74 having an associated memory. The third server 8 is provided with storage means 80, transmitter/receiver means 82, and a processor apparatus 84 having an associated memory. The transmitter/receiver means 72 of the second server 7 consist of a so-called modem pool - a group of analogue modems. The transmitter/receiver means 82 of the third server 8 consist of a group of ISDN interfaces. In FIG. 1, the terminal 1 is shown as being coupled to the Internet 3, the PSTN network 5, and the ISDN network 6. This does not imply, however, that the terminal 1 has a simultaneous connection with said three networks. The terminal 1 has a connection with only one of said networks at a time.

FIG. 2 shows a block diagram of a terminal 1 for use in the system according to the invention. Of the terminal 1, there are shown only those elements which are of importance for understanding the invention. The terminal 1 comprises an analogue modem or ISDN interface 10. The terminal may possibly be provided with both an analogue modem and an ISDN interface. The terminal 1 further comprises a processor apparatus 14 coupled to the modem or ISDN interface, which comprises a processor with associated memory. In the memory, there is stored, inter alia, software of a so-called web browser, which is used by the processor apparatus 14 to set up links via the Internet 3 shown in FIG. 1. Said web browser will be described in greater detail below. The modem or ISDN interface 10 and the processor apparatus 14 loaded with the web browser together form connection means for setting up links with servers. The terminal 1

further comprises a video card 16 coupled to the processor apparatus 14, which makes it possible to show video images, and a video screen 18 coupled to the video card 16. The terminal 1 further comprises a keyboard and a mouse 20, which are coupled to the processor apparatus 14.

The web browser in the terminal 1 consists of a standard web browser, e.g., Netscape Navigator or Microsoft Internet Explorer. Furthermore, the processor apparatus 14 is loaded with a software module which may be called up from the web browser. The software module makes it possible to set up another IP link than the Internet link active at that point in time, namely, in the event that the user clicks a special reference in an HTML page transmitted by the first server 4. The processor apparatus 44 of the server 4 is loaded with software for transmitting such HTML pages and suitable for communicating, using the Internet protocol, with the terminals 1 of users. The HTML pages comprise a reference to a file stored in the server 4, in which the following parameters for the software module are stored:

- the telephone number which must be used to call in on the second server 7 or third server 8 via either of the two networks 5 and 6,
- a parameter which indicates whether the calling in must take place with an analogue modem or via ISDN, or that both are possible,
- the name of the HTML page which must be shown after the new link has been set up.

If a user clicks a special reference on an HTML page transmitted by the first server 4, the software module is called up. As soon as the software module has verified whether the terminal 1 is provided with the correct calling-out equipment, and possibly after confirmation by the user, the link which is present via the Internet 3 between the terminal 1 and the first server 4, is phased out. On the basis of the telephone number in the file, to which the HTML page refers, there is subsequently set up, by way of either of the two networks 5 and 6, a link to the second server 7 or the third server 8. The name of the HTML page, which must be shown after the new link has been set up, is sent along. This is the HTML page which will subsequently be shown by the second or third server. Therefore, the software module is designed to phase out, during a browser session, the link via the Internet 3 to the first server 4 and subsequently,



as a function of the telephone number stored in the first server 4, to set up a new link by way of either of the telecommunications networks 5 and 6 to the second server 7 or the third server 8. The file in which the parameters are stored may be transmitted by the first server 4, together with the HTML page, to the terminal 1, whereafter the software module, if the user clicks the special reference, already has the file locally available and may directly use the parameters stored therein to set up the link to the second server 7 or third server 8. It may also be that the file is not sent along with the HTML page. If the user then clicks the special reference, the software module must first read out the file from the first server 4 and may only then, as a function of the parameters stored in the file, start to set up the link to second server 7 or third server 8.

The software module should preferably give off an error message in the following cases:

- if the user uses the software module but does not dispose of the correct calling-out equipment. Such is the case, e.g., if the user has no ISDN but does click a reference which the software module wants to use to set up a link via ISDN;
- if the new link to be set up is not realised within a specific period of time.

Furthermore, the software module preferably also works if the user has no fixed IP link and is therefore off line.

FIG. 3 shows an alternative exemplary embodiment of the invention in which the first server, the second server and the third server are formed by one single server 4. The server 4 comprises only one single processor apparatus, provided with software to be able to communicate with the terminal 1 via the Internet 3, the PSTN network 5, and the ISDN network 6, which are shown in FIG. 1. The transmitter/receiver means 42 are coupled to the Internet 3, the transmitter/receiver means 72 are coupled to the PSTN network 5, and the transmitter/receiver means 82 are coupled to the ISDN network 6.

The system according to the invention may be used, e.g., to offer a user, by way of the Internet and without additional payment, a video presentation with a (low) basic quality and subsequently to offer him/her the opportunity of viewing the video presentation with a higher quality via the PSDN network 5, or with a still higher

quality via the ISDN network 6. For this purpose, the video presentation with the basic quality is stored in the storage means 40 of the first server 4, the video presentation with the higher quality is stored in the storage means 70 of the second server 7, and the video presentation with the still higher quality is stored in the storage means 80 of the third server 8. The user may approach the server 4 in the known manner via the Internet 3, and gets to see an HTML page. Said HTML page includes a reference to a video presentation. By clicking said reference with his/her mouse, the user gets to see the video presentation via the Internet 3. A problem of the Internet 3 is that no bandwidth is guaranteed for the link between the terminal 1 and the server 4, nor is it guaranteed that a specific throughput of data is transmitted in the direction of the terminal 1. As a result, the quality of the video presentation via the Internet 3 in most cases is low and may additionally vary considerably as a function of the activity on the Internet 3. That is why a video presentation received via the Internet 3 often comes across somewhat jerkily.

FIG. 4 shows a video presentation received on the video screen 18 of the terminal 1. The video portion of the video presentation is displayed in a box 180 intended for that purpose. Besides said box, according to the invention there are displayed a first reference 182, a second reference 184, and a third reference 186. The first reference 182 refers to the video presentation with the basic quality, the second reference 184 refers to the video presentation with the higher quality, and the third reference 186 refers to the video presentation with the still higher quality. Suppose that the video presentation with the basic quality is received by the terminal 1 via the Internet 3: By, with the mouse cursor 188, clicking the second reference 184 or the third reference 186, the user may get to see the video presentation with the higher quality or with the still higher quality. This is done as follows: After the reference has been clicked, the parameters in the file to which the HTML page refers, are read out by the software module. As already described, said parameters are the telephone number which must be called, the type of calling-out equipment required, and the name of the page which must be shown there. The software module disconnects the fixed link to the first server via the Internet 3 and sets up a link to the second

server 7 or the third server 8 via the PSTN network 5 or the ISDN network 6, with the name of the HTML page which must be shown there, being sent along. The processor apparatus 74 or the processor apparatus 84, respectively, sees the name of the HTML page which must  
5 be shown and, on the basis thereof, looks up the correct data position in the video presentation with the higher quality, which is stored in the storage means 70, or in the video presentation with the still higher quality, which is stored in the storage means 80, respectively. Said parameter is preferably set in such a manner that  
10 the video presentation continues at the position where it was discontinued. The telephone number used for setting up said link preferably is a so-called payment number. This offers the operator of the video presentation the opportunity to collect money for the service offered. In the event that the first, second and third server  
15 are formed by one single server 4, as shown in FIG. 3, said server 4, if the link is set up via the PSTN network 5, is approached by way of the transmitter/receiver means 72. If the link is set up by way of the ISDN network 6, the server 4 is approached by way of the transmitter/receiver means 82. The processor apparatus 44, which is  
20 coupled thereto, sees the name of the HTML page which must be shown and, on the basis thereof, looks up the correct data position in the video presentation with the higher quality, which is stored in the storage means 70, or in the video presentation with the still higher quality, which is stored in the storage means 80. During the video  
25 presentation with the higher or the still higher quality, the references 182, 184 and 186 continue to be active. By clicking any of said references, the user may call up yet another quality.

The difference in quality between the video presentation with the basic quality, the video presentation with the higher quality,  
30 and the video presentation with the still higher quality, is made possible by the difference in data rates of the various media along which the video presentation is transmitted to the terminal 1. Via an ISDN1B link, there may be transmitted 64 kbit/s. Via an analogue telecommunication link, 28.8 kbit/s currently still is an accepted  
35 data rate. However, a private user of the Internet, as a function of the activity, sometimes has a link at his/her disposal of but a few kbit/s. The difference in quality between the various video presentations may be brought to expression in several quality

parameters. Thus, if the video presentation also comprises audio, the audio quality of the video presentation with a higher quality may be higher than the audio quality of the video presentation with the basic quality, and the audio quality of the video presentation with a still higher quality may be still higher than the audio quality of the video presentation with the higher quality. In a similar manner, there may also be differences in video quality between the video presentations. The resolution of the video images of the various video presentations may differ, or the number of images shown per unit of time may differ.

Another possibility is that the video presentation with the basic quality comprises only a portion of the entire video presentation and is shown to the user as an "appetiser". The user may then, if the video presentation interests him/her, get to see the video presentation with the higher quality, which comprises the entire video presentation, in the manner described above.

It will be understood by those skilled in the art that the invention is not limited to the exemplary embodiments shown, and that many modifications and amendments are possible without departing from the scope of the invention. Thus, it may be that, by way of an HTML page, there may be called up no video presentation with only a basic quality free of charge, but that the user is obliged to call up a video presentation with a higher quality directly by way of a telecommunications network, such as PSTN or ISDN. Furthermore, it is possible to use other networks than the Internet as a multimedia network, such as "The Net" - a network functioning according to Internet protocols, which will be operated by PTT Telecom in the Netherlands. Instead of by a PSTN network or ISDN network, the telecommunications network may be formed by another network in which the bandwidths of links are guaranteed, e.g., a mobile network, such as GSM. Of course, the system may comprise more telecommunications networks than the two shown or, on the contrary, fewer. Finally, it is possible to have the servers transmit ASP pages [ASP = Association of Shareware Professionals] known per se, instead of HTML pages or pages according to specifications still to be newly developed.

CLAIMS

1. System comprising
  - a multimedia network (3),
  - 5 - a first server (4), and
  - at least one terminal (1) comprising connection means (10,14) for setting up a link between the terminal (1) and the first server (4) by way of the multimedia network (3),characterised in that the system further comprises a
  - 10 telecommunications network (5;6) and that the connection means (10,14) are designed for, during a session, automatically setting up a link by way of the telecommunications network (5;6) between the terminal (1) and a second server (4;7;8) as a function of a code stored in the first server (4), such as a telephone number, it being
  - 15 possible for the first server (4) and the second server (4;7;8) to be one and the same.
2. System according to claim 1, characterised in that the
  - 20 telephone number is a payment number.
3. System according to claim 1 or 2, characterised in that the first server (4) comprises storage means (40) for storing a video presentation with a basic quality and transmitter means (42) for transmitting the video presentation with the basic quality by way of
  - 25 the multimedia network (3) to the terminal (1), and that the second server (4;7;8) comprises storage means (70;80) for storing a video presentation with a higher quality and transmitter means (72;82) for transmitting the video presentation with the higher quality by way of the telecommunications network (5;6) to the terminal (1).
- 30 4. System according to claim 3, characterised in that the video presentation with the higher quality has a higher image resolution than the video presentation with the basic quality.
- 35 5. System according to claim 3 or 4, characterised in that the video presentation with the higher quality comprises more images per unit of time than the video presentation with the basic quality.

6. System according to any of the claims 3 to 5 inclusive, characterised in that the video presentation also comprises audio, and that the audio quality of the video presentation with the higher quality is higher than the audio quality of the video presentation with the basic quality.

7. System according to any of the claims 3 to 6 inclusive, characterised in that the video presentation with the higher quality is longer than the video presentation with the basic quality.

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8. Terminal (1) for use in a system which further comprises a multimedia network (3) and a first server (4), the terminal (1) comprising connection means (10,14) for setting up a link between the terminal (1) and the first server (4) by way of the multimedia network (3), characterised in that the connection means (10,14) are also designed for - during a session, as a function of a code stored in the first server (4), such as a telephone number - automatically setting up a link between the terminal (1) and a second server (4;7;8) by way of a telecommunications network (5;6), it being possible for the first server (4) and the second server (4;7;8) to be one and the same.

9. Server (4) for use in a system which further comprises a multimedia network (3) and at least one terminal (1), which terminal (1) comprises connection means (10,14) for setting up a link between the terminal (1) and the server (4) by way of the multimedia network (3), characterised in that in the server (4) there is stored a code, such as a telephone number, for automatically setting up, by the connection means (10,14) during a session, a link by way of a telecommunications network (5;6) between the terminal (1) and a further server (4;7;8), as a function of the telephone number, it being possible for the server (4) and the further server (4;7;8) to be one and the same.

10. Server (4) according to claim 9, characterised in that the telephone number is a payment number.

11. Server (4) according to claim 9 or 10, characterised in that

- the server (4) comprises storage means (40) for storing a video presentation with a basic quality and transmitter means (42) for transmitting the video presentation with the basic quality by way of the multimedia network (3) to the user, and that the server (4) comprises storage means (70;80) for storing a video presentation with a higher quality and transmitter means (72;82) for transmitting the video presentation with the higher quality by way of the telecommunications network (5) to the user.
- 10 12. Server (4) according to claim 11, characterised in that the video presentation with the higher quality has a higher image resolution than the video presentation with the basic quality.
- 15 13. Server (4) according to claim 11 or 12, characterised in that the video presentation with the higher quality comprises more images per unit of time than the video presentation with the basic quality.
- 20 14. Server (4) according to any of the claims 11 to 13 inclusive, characterised in that the video presentation also comprises audio and that the audio quality of the video presentation with the higher quality is higher than the audio quality of the video presentation with the basic quality.
- 25 15. Server (4) according to any of the claims 11 to 14 inclusive, characterised in that the video presentation with the higher quality is longer than the video presentation with the basic quality.

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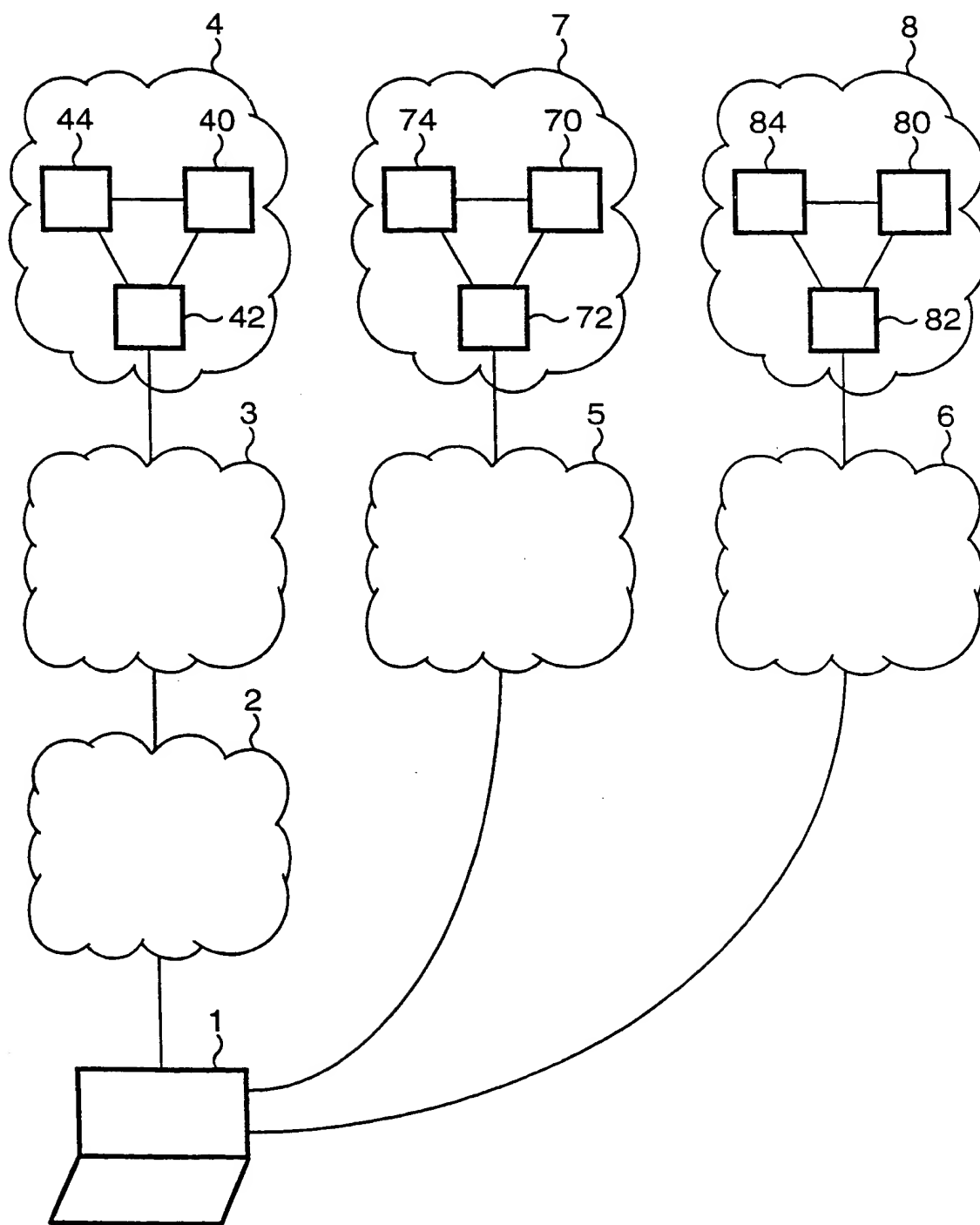


Fig. 1



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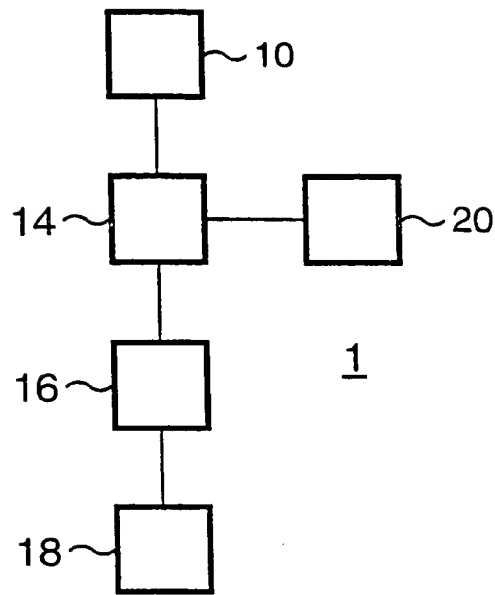


Fig. 2

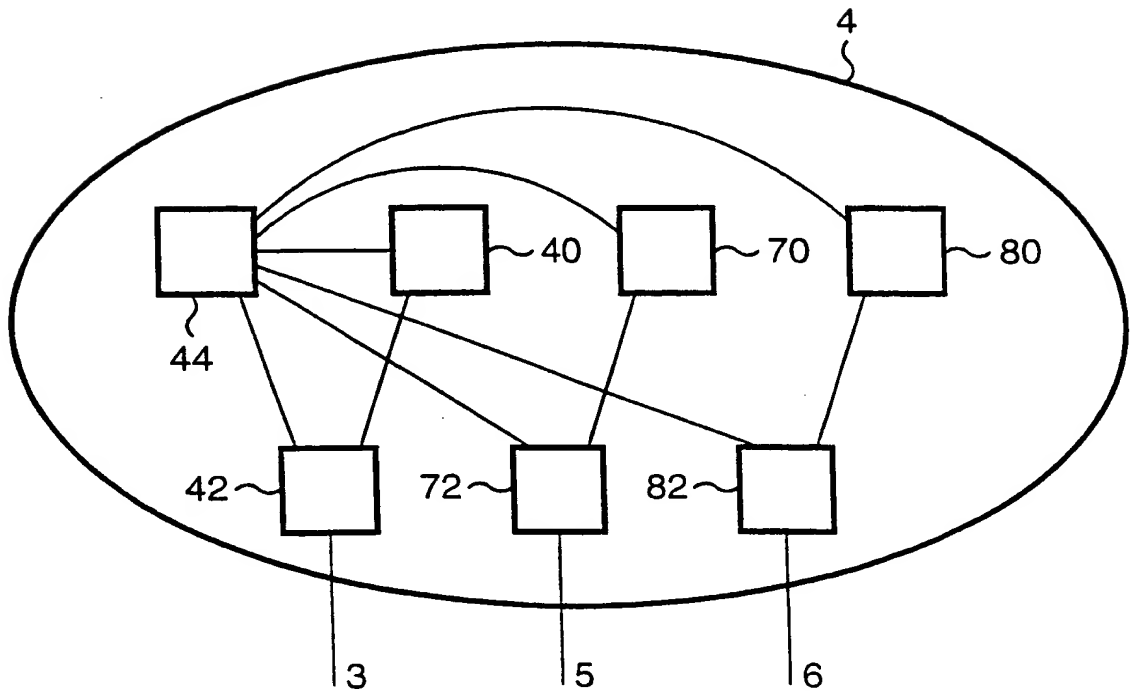


Fig. 3

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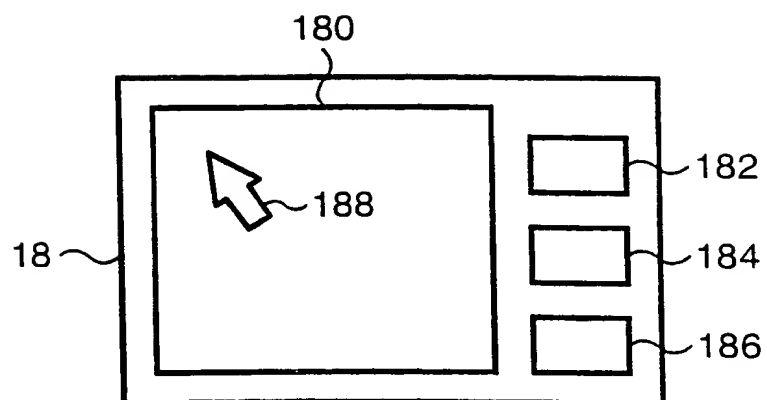


Fig. 4

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP 98/05867

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 6    H04L29/06    H04N7/173		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC 6    H04L    H04N		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used)		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X  A	WO 96 38962 A (SIEMENS AKTIENGESELLSCHAFT) 5 December 1996  see abstract see page 2, line 30 - page 3, line 15 see page 10, line 1-28 see page 14, line 24 - page 15, line 33 see figures 1,5 ---	1,2,8-10  3-7, 11-15
A	FR 2 741 495 A (SIEMENS AG) 23 May 1997 see abstract see page 2, line 11 - page 3, line 21 see page 5, line 1-12 see page 7, line 9 - page 8, line 25 see figure 1 --- -/--	1,2,8-10
<div style="display: flex; justify-content: space-between;"> <span><input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.</span> <span><input checked="" type="checkbox"/> Patent family members are listed in annex.</span> </div>		
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Date of the actual completion of the international search  <div style="text-align: center; font-weight: bold;">14 January 1999</div>		Date of mailing of the international search report  <div style="text-align: center; font-weight: bold;">27/01/1999</div>
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer  <div style="text-align: center; font-weight: bold;">Lázaro López, M.L.</div>

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 98/05867

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category <sup>2</sup>	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>EP 0 698 999 A (HEWLETT PACKARD CO)  28 February 1996  see column 11, line 50 - column 12, line  10</p> <p style="text-align: center;">-----</p>	<p>3-5, 7,  11-13, 15</p>

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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